

We claim:

1. A medical clip dispenser apparatus for the pinching of a medical clip or staple about a portion of a mammalian body tissue, said apparatus comprising:

an elongated support beam having a distal end with a stationary lower housing thereon;

a distally movable hollow cinch slidably disposed on said lower housing, said cinch having a portion of a pair of openable and closable jaws squeezably arranged therewithin; and

an elongated pusher having a generally cross-shaped member on a distal end thereof in slidable engagement with a shoulder track on said jaws, to slide between said jaws as they spread apart from one another and for concurrently pushing a new clip into position between said jaws.

2. The medical clip dispenser as recited in claim 1, wherein each of said jaws has an inner edge with a shoulder track extending therealong, for guided receipt of said clip and for subsequent stabilizing receipt of said cross-shaped member.

3. The medical clip dispenser as recited in claim 2, wherein said cross-shaped member includes a pair of wing members extending therefrom, each of said wing members having an outer edge which mates with said shoulder track to keep prevent premature closing of said jaws after a clip has been fed between said jaws.
4. The medical clip dispenser as recited in claim 3, wherein each of said jaws has an upstanding pin thereon for sliding engagement with a pocket in a cam track in said cinch to prevent accidental closing of said jaws.
5. The medical clip dispenser as recited in claim 1, wherein said cinch and said lower housing each have interengagable rails to prevent their inadvertent separation from one another.
6. The medical clip dispenser as recited in claim 4, wherein said cross shaped member has a pair of upstanding rails thereon, each of said rails having a distal edge arranged to push distally a new clip in said shoulder track during distal advancement of said cross-shaped member.

7. The medical clip dispenser as recited in claim 6, wherein each of said rails has a sloped proximal edge to permit said rails to be cammed downwardly and out of the way of a successive clip during proximal movement of said cross-shaped member.
8. The medical clip dispenser as recited in claim 4, wherein said cinch has an inner surface on each of said cam tracks for slidable receipt and release of a pin therefrom to permit said jaws to be temporarily locked in the open position.
9. The medical clip dispenser as recited in claim 3, including an elongated biasing spring secured in said lower housing, said elongated biasing spring having a distal end which is in biased rubbing engagement with a lower side of said cross-shaped member so as to keep said cross-shaped member engaged with said clip during loading thereof between said jaws.

10. The medical clip dispenser as recited in claim 9, wherein said elongated biasing spring has a bifurcated proximal end, said bifurcated proximal end being arranged to straddle said elongated pusher for alignment of said pusher with respect to said biasing spring.

11. A medical clip dispenser apparatus for the pinching of a medical clip or staple about a portion of a mammalian body tissue, said apparatus comprising:

an elongated support beam having a distal end with a stationary lower housing brace thereon;

a distally movable U-shaped cinch slidably disposed on said lower housing, said cinch having a portion of a pair of closable jaws squeezably arranged therewithin;

an elongated pusher having a generally cross-shaped pusher member on a distal end thereof in slidable engagement with said clip or staple, to push a new clip into position between said jaws; each of said jaws having an inner edge with a shoulder track extending therealong, for guided receipt of said clip and for subsequent receipt of said cross-shaped pusher member; said cross-

shaped member including a pair of wing members extending therefrom; said wing members laterally disposed on said cross-shaped member so as to slidably engage said shoulder tracks in said jaws after a clip has been loaded between said jaws; said cross-shaped member comprising a pusher having a pair of upstanding rails thereon, each of said rails having a distal edge arranged to push distally a new clip in a clip track during distal advancement of said cross-shaped member; each of said rails having a sloped proximal edge to permit said rails to be cammed downwardly and out of the way of said clip track during proximal movement of said cross-shaped member; and wherein each of said jaws has an upstanding pin thereon for respective engagement with a pocket in a cam track in said cinch to prevent inadvertent closing of said jaws.

12. A method for dispensing a medical clip onto a mammalian body tissue comprising:

arranging a pair of closable jaws to be supported on a stationary lower housing brace of an elongated medical clip dispensing device;

supporting said jaws between said brace housing and a movable cinch housing;

moving said cinch housing proximally with respect to said housing brace to permit said jaws to bias open with respect to one another;

pushing an open clip by an elongated pusher member into position between said jaws for receipt of said clip in an arrangement of shoulder tracks in an inner edge of each of said jaws; and

moving said cinch distally with respect to said housing brace so as to pinch closed said jaws by a camming action between an outer edge of each of said jaws and an inner edge arrangement on inner side portions of said cinch, so as to crimp said clip onto a body tissue.

13. The method as recited in claim 12, including:

arranging a cam surface on said outer edge of each of said jaws to permit said jaws to be cammed pinchably closed by sliding action of said cam surfaces on said jaws relative to a pair of cam edges on said cinch, during distal movement of said cinch member with respect to said brace.

14. The method as recited in claim 13, including:

pushing a clip into position between said jaws by engagement of a pair of upstanding rails on said distal end of said pusher member against a bridging portion of said clip.

15. The method as recited in claim 13, including:

arranging a pin on an intermediate portion of each of said jaws;

arranging a pair of cam tracks in an inner surface of said cinch for slidable engagement with said pins on said jaws;

biasedly locking open said jaws by cammed motion and receipt of said pins within a pocket arrangement in a distal end of said cam tracks in said inner surface of said cinch.

16. The method as recited in claim 14, including:

arranging an elongated biasing spring in said brace of said lower housing, said biasing spring having a bifurcated proximal end and a biased upwardly directed distal end; and

aligning said bifurcated proximal end about said pusher member to maintain said pusher member in alignment with respect to said jaws.

17. The method as recited in claim 16, including:

biasing said distal end of said of said biasing spring so as to keep said upstanding rails against said bridging portion of said clips during delivery thereof to said jaws.

18. The method as recited in claim 17, including:

engaging said pins in said cam track in said cinch to limit distal advance and proximal motion of said cinch with respect to said said lower brace.